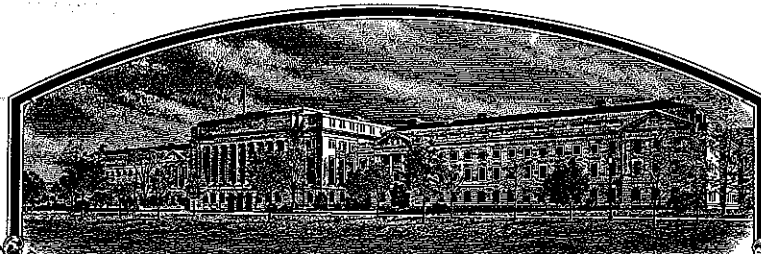


No.

200400113



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Rutgers, The State University of New Jersey

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Titanium'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-ninth day of November, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

1. NAME OF OWNER <i>The State University of New Jersey</i> Rutgers University (BT:8/17/2007)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME SBM	3. VARIETY NAME Titanium
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) Foran Hall Plant Biology & Pathology Dept. 59 Dudley Road New Brunswick, NJ 08901		5. TELEPHONE (Include area code) 732 - 932 - 9711 ext. 160	FOR OFFICIAL USE ONLY PVPO NUMBER <i>200400113</i>
		6. FAX (Include area code) 732 - 932 - 9441	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Government Institution	8. IF INCORPORATED, GIVE STATE OF INCORPORATION	9. DATE OF INCORPORATION	FILING DATE <i>February 20, 2004</i>
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers.) Dr. William Meyer c/o Rutgers University - Cook College Foran Hall Plant Biology & Pathology Dept. 59 Dudley Road New Brunswick, NJ 08901			F E E S R E C E I V E D FILING AND EXAMINATION FEES: \$ <i>3652-</i> DATE <i>2/20/04</i> CERTIFICATION FEE: \$ <i>768.00</i> DATE <i>10/9/2007</i>
11. TELEPHONE (Include area code) 732 - 932 - 9711 ext. 160	12. FAX (Include area code) 732 - 932 - 9441	13. E-MAIL	14. CROP KIND (Common Name) Tall Fescue
15. GENUS AND SPECIES NAME OF CROP <i>Festuca arundinacea</i>		16. FAMILY NAME (Botanical) <i>Poaceae</i>	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)	
		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO THE NUMBER OF CLASSES? IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? IF YES, SPECIFY THE NUMBER 1,2,3, etc. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> 5 CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER <i>Keith R. Cooper</i> NAME (Please print or type) <i>Keith R. Cooper</i> CAPACITY OR TITLE <i>Executive Dean Cook College</i>		SIGNATURE OF OWNER NAME (Please print or type) CAPACITY OR TITLE DATE <i>1/29/07</i>	

Exhibit A:
Origin and Breeding History
Titanium (SBM) Tall Fescue

'Titanium'
 (SBM) tall fescue (*Festuca arundinacea* Schreb.) is a medium low-growing, dark green, medium-fine-leaved, turf-type tall fescue selected from the progenies of 29 clones. SBM was selected for intermediate density, leafy semi-dwarf growth habit and medium maturity. Approximately 95% of the parental germplasm in SBM contain the Neotyphodium endophyte.

The parental germplasm of SBM tall fescue traces its origin to plants selected from old turfs of the United States in a germplasm collection program initiated in 1962, to plants selected from or related to Rebel tall fescue (Funk et al., 1981). Attractive clones were selected from old turfs in Birmingham, AL; Athens, Atlanta, and Milledgeville, GA; Preston, ID; Baltimore, MD; Bayonne, Jersey City, Elizabeth, Princeton, and Cape May, NJ; eastern North Carolina; Philadelphia, PA; Nashville, TN; Lexington, KY; Cincinnati, OH; Dallas, TX, and northern Mississippi. The tall fescue plants selected from old turfs were of unknown origin. All were large patches of turf surviving in stressful environments indicating that they had persisted and developed over a period of many years.

A few hundred attractive, turf-type plants were collected and established in spaced-plant nurseries and/or frequently mowed clonal evaluation trials at Rutgers University. All but a few dozen of the most promising plants were quickly discarded. The best selections were very different from any tall fescue variety in existence at the time of collection. They produced lower-growing turfs with finer leaves, greater density, darker color and greater tolerance of close mowing.

The most promising plants were identified by their persistence and appearance in old turfs and their performance in spaced-plant nurseries, mowed clonal evaluation tests, and single-plant progeny trials under turf maintenance. Intercrosses of the best performing plants were subjected to varying cycles of phenotypic and genotypic selection depending on their date of collection. New sources of germplasm were added to the breeding program as it became available from the continuing collection program. Each cycle of selection showed continued progress in producing lower-growing, darker green, attractive plants with improved turf performance scores. Selection was also effective in maintaining high seed yields, and good stress tolerance. Substantial progress was made in developing tall fescues with finer leaves, a lower growth profile, increased persistence under

close mowing, and increased density.

Large numbers of single-plant progenies were seeded in turf evaluation trials at the Plant Science Research Farm at Adelphia, NJ in 1995, 1996, 1997, and 1998. The plants selected for progeny evaluation were selected from spaced-plant nurseries at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm selected from old turfs and germplasm selected from or related to Rebel tall fescue.

Following a period of brown patch disease in 1998, a total of 6,150 tillers were selected from the best performing single-plant progeny turf plots from the 1995, 1996, 1997 and 1998 tall fescue test at Adelphia. Single-plot progenies were selected from 510 plots from 8 different populations from the 1995 test, 585 plots from 9 different populations in the 1996 test, 1,055 plots from 10 different populations from the 1997 test and 635 plots from 9 different populations from the 1998 test. These plants were established in greenhouse flats prior to their transfer to two spaced-plant nurseries in the fall of 1999. Selection was based on performance records as well as appearance at the time the plants were selected from these progeny plots. Selection of plants from each progeny was based on an attractive dark green color, medium-fine leaves, abundant tillering, a more open, coarse canopy structure and freedom from brown patch disease. Brown patch selections were put in a separate nursery that consisted of 3,900 plants, while the open, coarse selections were placed in another nursery that consisted of 3,060 plants. In the spring of 2000, 40 plants were selected from those nurseries for characteristics such as medium-early maturity, dark green color, intermediate shoot density, semi-dwarf leafy growth habit and freedom from disease. The selected plants were moved prior to anthesis, to an isolated crossing block at Adelphia. A total of 39 plants with the best floret fertility and highest seed yield from 22 different mother lines were harvested. In the fall of 2000, one turf plot of each line was established at Adelphia and 1 gram of seed from each line was sent to Advanta Seeds Pacific.

In the fall of 2000 a seed increase block containing 60 plants each of 39 progeny lines (2,340 total plants) was established in Albany, OR. Due to poor turf performance 5 progeny lines were removed before anthesis. In 2001 negative mass selection was used and 7.65 % of the plants were rogued from the population. The remaining plants were harvested in bulk and designated breeder seed. This seed was used to establish a morphological nursery for Plant Variety Protection (PVP) measurements.

References

1. Buckner, Robert C., Jerrell B. Powell, and Rod V. Frakes. 1979. Historical Development, in Buckner, Robert C., and Lowell P. Bush (editors) Tall Fescue. Agronomy Monograph 20. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Inc., Publishers. Madison, Wisconsin, pages 1-8.
2. Funk, C. R., R. E. Engel, W. K. Dickson, and R. H. Hurley. 1981. Registration of 'Rebel' tall fescue. Crop Sci. 21:632.

Diagram of Origin and Breeding History**Titanium (SBM) Tall Fescue**

- 1962 - 1994: Germplasm collection, evaluation, and genetic improvement.
- 1995 - 1998: Planted single-plant progenies of plants selected from current cycles of population improvement programs in closely mowed turf trials at Adelphia and North Brunswick, New Jersey.
- 1999: Selected 6,150 plants from the best performing single-plant turf plots planted in 1995, 1996, 1997 and 1998. Established selected plants in two isolated spaced-plant nursery at Adelphia, New Jersey.
- 2000: Moved 40 plants to an isolated crossing block. Harvested from 39 plants with excellent appearance and floret fertility.
- Each plant of SBM tall fescue traces at least 20 percent of its ancestral germplasm to plants selected from or related to Rebel tall fescue. Eighty percent of its ancestral germplasm traces to plants selected from old turf areas of the United States in a germplasm collection program initiated in 1962 and has undergone numerous cycles of phenotypic and genotypic recurrent selection for improved turf characteristics.

2. Breeder Seed Maintenance:

A breeder seed multiplication was planted in isolation in 2000 in Albany, Oregon. Seed was harvested in bulk in 2001, designated breeder seed and is maintained in cold storage. Seed propagation is limited to three generations, one each of foundation, registered, and certified.

3. Stability and Uniformity:

SBM has been a stable uniform cultivar over two generations. No off-type or variant plants have been observed during the multiplication or reproduction. Turf plots of SBM have been uniform and stable.
(ST:8/17/2007)

Exhibit B:**Novelty Statement of Titanium (SBM) Tall Fescue**

The following summary outlines the distinctive characteristics of Titanium (SBM). The novelty of Titanium (SBM) is based on the unique combination of these characteristics. Titanium (SBM) is most similar to Rebel II, but may be differentiated by using the following criteria:

1. The genetic color of SBM is darker compared to Rebel II (tables 1A, 1B).
2. The flag leaf characteristics for SBM of; length, width and sheath length are less compared to Rebel II (tables 1A, 1B).
3. The number of spikelets per panicle is less for SBM compared to Rebel II (tables 2A, 2B).
4. The distance between the lower most whorls of the panicle is shorter for SBM than Rebel II (tables 2A, 2B).
5. SBM produces more plants with only one branch on the lower most whorl than Rebel II (tables 3A, 3B).
6. SBM has a more erect growth habit compared to Rebel II (tables 3A, 3B).
7. SBM has a higher seed weight compared to Rebel II (tables 4A, 4B).

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7830, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY PROGRAM
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT C
(TALL & MEADOW FESCUES)**

**OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)**

NAME OF APPLICANT(S) Rutgers, University of New Jersey State University of New Jersey (BT:8/17/07)	TEMPORARY DESIGNATION SBM	VARIETY NAME Titanium
ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code) Foran Hall Plant Biology & Pathology Dept. 59 Dudley Road New Brunswick, NJ 08901	FOR OFFICIAL USE ONLY PVPO NUMBER 200400113	

Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

 X 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31	2 = Rebel	3 = Olympic	4 = Bonanza	5 = Arid	6 = Rebel II
7 = Shortstop	8 = Silverado	9 = Rebel Jr.	10 = Mini Mustang	11 = Crewcut	12 = Bonsai

Forage Types

20 = Kentucky 31	21 = Martin	22 = Forager	23 = Mozark
24 = Kenhy	25 = AU Triumph	26 = Fawn	27 = Cajun

 2 = *F. pratensis* (Meadow)

30 = Admira	31 = Beaumont	32 = Comtessa	33 = Ensign	34 = Trader
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* 2. CYTOLOGY:

 42 Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

 0 Transition Zone 2 West 2 Northeast Other (Specify):

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

 5 Maturity Class 1 = Very early () 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)

4. MATURITY: (continued)

6 = Bonanza

7 = Late (Silverado)

8 = ()

9 = Very late

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Date Headed 39.00 days after April 1, _____

Location Albany, OR

_____ Days earlier than _____
 Maturity same as 6
 _____ Days later than _____

} Comparison Variety

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms * INTERNODE LENGTH CM:

from crown to top of panicle, if panicle is nodding, straighten)

(First internode subtending the flag leaf)

88.85 cm Height

17.35 cm InternodeLength

_____ cm Shorter than _____
 Height same as 6
 _____ cm Taller than _____

} Comparison Variety

_____ cm Shorter than _____
 Length same as 6
 _____ cm Longer than _____

} Comparison Variety

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

21.05 cm Height

_____ cm Shorter than _____
 Height same as 6
 _____ cm Taller than _____

} Comparison Variety

* 6. GROWTH HABIT: (Mature Plants)

7 1 = Prostrate ()

3 = Semiprostrate ()

5 = Horizontal ()

7 = Semierect (Rebel)

9 = Erect (Mini Mustang)

* 7. RHIZOMES (Psuedo):

_____ mm Length

1 1 = Absent ()

2 = Rare (Rebel)

3 = Common ()

* 8. LEAF BLADE: (Tiller leaves/ turf color)

* 7 Color: 1 = Light green ()

3 = Medium light green ()

5 = Green ()

7 = Medium dark green ()

9 = Very dark green ()

5 Specify rating of comparison variety

* 1 Anthocyanin: 1 = Absent ()

9 = Present ()

* 1 Basal Hairs: 1 = Absent ()

9 = Present ()

* 1 Margins: 1 = Smooth ()

5 = Semi-rough ()

9 = Rough ()

8. LEAF BLADE: (continued)

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* 6 Width Class: 1 = Very coarse () 3 = Coarse () 5 = Medium ()

7 = Fine () 9 = Very Fine ()

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

* TILLER LEAF WIDTH MM:

35.08 cm Tiller Leaf Length

8.60 mm Tiller Leaf Width

_____ cm Shorter than _____

Length same as _6_

_____ cm Taller than _____

} Comparison Variety

_____ mm Narrower than _____

Width same as _6_

_____ mm Longer than _____

} Comparison Variety

FLAG LEAF LENGTH CM:

FLAG LEAF WIDTH MM:

32.45 cm Flag Leaf Length

6.03 mm Flag Leaf Width

5.55 cm Shorter than _6_

Length same as _____

_____ cm Longer than _____

} Comparison Variety

1.55 mm Narrower than _6_

Width same as _____

_____ mm Wider than _____

} Comparison Variety

* 9. LEAF SHEATH: (Basal Portion)

* 1 Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ()

* 9 Auricle Hairiness: 1 = Absent () 9 = Present (100%)

* 10. PANICLE: (At seed maturity except where noted.)

* 5 Shape: 1 = Narrow-tapering (38%) 5 = Ovate () 7 = Oblong (62%) 9 = Other (specify)

* 7 Type: 1 = Compact (38%) 5 = Intermediate () 7 = Open (62%) 9 = Other (specify)

* 9 Orientation: 1 = Nodding () 9 = Erect (100%)

* 1 Branch Pubescence: 1 = Glabrous (98%) 9 = Pubescent ()

* 1 Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green

4 = Purplish 5 = Reddish 6 = Other (Specify)

* 1 Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green

4 = Purplish 5 = Reddish 6 = Other (Specify)

* 67.83_ cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)

_____ cm Shorter than _____

Length same as _6_

_____ cm Longer than _____

} Comparison Variety

* 11. SEED: (With Lemma & Pelea)

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* 3190 mg per 1000 seeds

____ mg Less than ____
 Weight same as ____
 ____ 880 mg More than ____ 6

} Comparison Variety

PALEA: (Keels or Margins) ____ 5 Hairs: 1 = Absent () 5 = Short (Missouri 96) 9 = Long ()
 LEMMA: ____ 7 Hairs: 1 = Absent (Kenhy) 5 = Several () 9 = Many (Missouri 96)

____ 6.83 mm Lemma Length (Mature) ____ 1.55 mm Lemma Width
 ____ mm Shorter than ____
 Length same as ____ 6
 ____ mm Longer than ____

} Comparison Variety

____ mm Narrower than ____
 Width same as ____ 6
 ____ mm Wider than ____

} Comparison Variety

*AWNS: ____ 9 AWNS: 1 = Absent () 9 = Present (Falcon) ____ 100 % Plants with awns

____ 1.08 mm Awn length (Of those present.)

____ mm Shorter than ____
 Length same as ____ 6
 ____ mm Longer than ____

} Comparison Variety

12. DISEASE, INSECT, AND NEMATODE REACTION: (0= Not Tested 1= Least Resistant 9= Most Resistant)

____ 0 Melting-out *Drechslera poae* ____ 0 Blind Seed *Gloeotinia temulenta*
 ____ 0 Leaf Spot *D. siccas* ____ 0 Dollar Spot *Lanzia, Mollerdiscus* spp.
 ____ 0 Net Blotch *D. dictyoides* ____ 0 Stem Rust *Puccinia graminis*
 ____ 0 Brown Patch *Rhizoctonia solani* ____ 0 T. Blight *Typhula incarnata*
 ____ 0 C. Leaf Spot *Cercospora fectuae* ____ 0 Pythium Blight *Pythium* spp.
 ____ 0 Pink Snow Mold *Gerlachia nivalis* ____ 0 Powdery Mildew *Erysiphe graminis*
 ____ 0 Silver Top *F. tricinctum, F. roseum* ____ 0 Crown Rust *Puccinia coronata*
 ____ 0 Other Disease _____
 ____ 0 Other Insect _____
 ____ 0 Other Nematode _____

13. ENVIRONMENTAL STRESS

____ 6 Drought Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()
 ____ Shade Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

6 Winter Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	Rebel II	2	Leaf Color	Rebel II	3
Panicle Color	Rebel II	2	Panicle Shape	Rebel II	2
Seed Size	Rebel II	3	Cold Injury	Rebel II	2
Winter Color	Rebel II	3	Heat	Rebel II	2
Disease	Rebel II	3			

* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

A morphological nursery designated 01PVPFA was established in September 2001, in Albany, Oregon. Experimental design consisted of 20 entries; 4 replications per entry; 20 plants per replication; for a total of 80 plants per entry for tables 1A, 1B. Experimental design consisted of 20 entries; 3 replications per entry; 20 plants per replication; for a total of 60 plants per entry for tables 2 - 4. KY-31, Rebel II, Plantation and Tulsa were used as standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nursery received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2002 and 2003. The fertilizer source was 15 - 15 - 15 and was applied as a split application with ½ applied in the spring and ½ in the autumn. The nursery was sprayed twice each spring, 3 weeks between applications, with Tilt (2oz/acre rate), to prevent stem rust. One pound of Karmex per acre rate was applied during the late summer to prevent emergence of volunteer seedlings.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed.

Exhibit D:
Additional Description
Titanium (SBM) Tall Fescue

SBM is an improved turf-type tall fescue. It has a shorter mature plant height (tables 1A, 1B) than previously released tall fescue cultivars, such as KY-31 and Tulsa. SBM has a medium maturity with a heading date later than KY-31 (tables 1A, 1B). SBM exhibits a darker genetic color compared to KY-31, Rebel II, and Tulsa (tables 1A, 1B). The length of the panicle is shorter for SBM compared to KY-31 and Tulsa (tables 1A, 1B). The length of the flag leaf of SBM is significantly shorter than KY-31, Rebel II, Plantation and Tulsa (tables 1A, 1B). The flag leaf characteristic sheath length are shorter for SBM compared to KY-31, Rebel II and Tulsa (tables 1A, 1B). The leaf blade length is shorter for SBM compared to KY-31 and Tulsa ^{about the same for} (tables 1A, 1B). _(or 3/17/04) SBM has a shorter palea length and width as well as a shorter glume length than KY-31 (tables 2A, 2B). SBM has fewer spikelets per panicle compared to KY-31, Rebel II, Plantation and Tulsa (tables 2A, 2B). The distance between the lower most whorl and the apex is reduced for SBM compared to KY-31 and Rebel II (tables 2A, 2B). SBM expresses fewer plants with a horizontal growth habit compared to KY-31, Rebel II and Tulsa (tables 3A, 3B). SBM has higher frequency of plants with an erect growth habit compared to Plantation (tables 3A, 3B). SBM has a higher percentage of plants with purple pigmentation of the panicle than KY-31, but less than Plantation and Tulsa (tables 3A, 3B). SBM expresses a higher frequency of plants with only one main branch of the lower most whorl compared to KY-31, Rebel II, and Plantation (tables 3A, 3B, illus. 1). Pubescence of the panicle branch is less dominant in SBM compared to KY-31 and Plantation (tables 3A, 3B). The milligram weight of 1,000 seeds of SBM is greater than KY-31, Rebel II, Plantation and Tulsa (tables 4A, 4B). The production of dark pigmentation at the nodes is less frequent in SBM compared to KY-31, Rebel II and Tulsa (tables 4A, 4B).

Table 1A
2002 Morphological Data

Cultivar	Genetic Color (Scale: 1-9) (9 = darkest) (est: 8/17/04)	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
SBM	5.58	39.00	65.25	88.85	11.00	67.83	32.45	6.03	21.05	20.85	17.35	35.08	8.60	15.40	11.63
SBL	5.71	36.25	64.75	95.18	11.03	73.18	35.28	6.70	21.93	21.83	17.25	30.05	8.85	16.48	11.73
RB3	6.21	38.25	65.00	86.90	10.83	69.03	32.35	6.98	17.88	20.33	15.15	27.65	9.23	13.90	11.03
RB2	5.90	35.50	64.50	89.40	10.40	68.85	33.45	6.78	19.45	21.00	16.68	28.25	8.93	15.03	11.25
ATF799	5.89	43.75	66.75	83.28	10.45	62.83	29.08	6.00	20.38	19.05	17.10	26.08	8.38	14.13	10.85
ATF800	5.61	42.50	67.25	93.05	10.78	68.63	33.65	6.00	24.75	22.25	20.48	29.40	8.30	17.05	12.10
ATF802	5.66	40.00	65.75	91.48	11.13	72.38	34.15	5.98	18.75	22.18	16.48	27.85	8.70	13.58	10.98
ATF704S1	5.43	38.00	65.75	97.10	11.18	70.98	35.03	6.38	25.05	22.70	20.35	29.88	8.38	17.63	12.33
ATF803	5.59	39.50	66.75	92.48	10.60	72.73	36.48	7.45	19.63	22.10	16.65	31.48	9.35	15.10	11.83
ATF805	6.13	45.75	69.75	73.20	8.75	58.40	28.48	5.78	14.68	18.38	13.38	23.53	8.03	10.95	9.60
KY-31	3.86	35.25	65.25	122.95	11.23	83.73	48.43	7.68	37.30	32.63	26.38	44.10	11.05	31.05	18.65
Rebel II	5.04	41.25	66.50	88.18	10.60	68.45	38.00	7.58	19.35	23.10	16.70	32.75	9.85	15.63	12.48
Plantation	5.69	40.25	66.00	89.23	11.03	68.00	35.28	6.73	20.95	22.15	17.13	31.20	9.25	16.35	12.55
Tulsa	5.09	40.50	66.50	97.98	11.00	72.35	37.35	6.48	24.53	23.40	19.78	32.40	8.63	18.78	13.00
018	6.06	40.50	66.00	88.15	11.15	68.08	33.43	6.73	20.28	20.98	16.90	28.40	8.80	14.85	11.45
LSD (.05)	0.21	2.01	1.42	5.38	0.90	4.02	2.49	0.63	2.47	1.31	1.56	3.65	0.60	1.94	0.94
CV	3.31	4.32	1.82	4.89	7.02	4.83	5.97	8.27	9.33	4.96	7.18	10.05	5.81	9.83	6.54

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

Table 1B
2003 Morphological Data

Cultivar	Genetic Color (Scale 1-9, 9 = Darkest)	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (mm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (mm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
<i>Tritanum</i> ^a															
SBM	5.64	57.25	59.65	111.50	27.25	71.43	43.60	5.10	38.95	26.53	24.98	40.60	6.15	31.45	16.68
SBL	5.58	51.25	56.65	115.93	28.25	77.35	46.50	5.10	37.90	28.90	24.98	42.50	5.85	31.43	17.50
RB3	5.96	55.50	58.35	115.60	27.75	76.43	44.40	5.38	38.13	27.10	24.75	43.63	6.05	29.58	17.10
RB2	6.06	52.00	56.48	113.75	28.00	73.23	44.68	5.00	39.88	26.63	24.70	41.95	5.38	30.45	17.50
ATF799	5.90	60.75	61.98	107.50	27.25	67.68	38.88	4.40	38.75	23.28	25.20	38.25	5.18	28.65	16.28
ATF800	5.76	58.50	59.83	118.05	28.50	76.53	42.60	4.85	39.60	27.40	27.35	41.48	5.40	28.30	17.78
ATF802	5.71	58.50	60.60	120.35	27.50	80.30	48.10	5.15	38.65	29.05	25.75	42.88	5.88	29.43	17.73
ATF704S1	5.43	51.25	56.50	118.13	27.50	76.93	45.05	5.10	39.85	27.65	26.45	40.13	5.70	28.73	17.38
ATF803	5.53	58.00	60.30	120.65	27.00	78.18	46.43	5.25	42.98	28.08	24.80	45.03	6.00	33.50	18.43
ATF805	6.34	58.50	60.83	110.10	25.75	75.38	42.53	5.15	34.83	25.80	22.85	39.85	5.90	26.30	16.43
KY-31	2.99	46.00	54.28	145.90	27.50	89.48	59.13	7.18	55.18	37.18	28.05	61.03	9.05	51.40	24.68
Rebel II	5.11	57.75	59.08	118.63	27.75	82.08	50.90	6.03	36.43	28.98	24.58	48.60	6.33	28.58	18.98
Plantation	5.71	57.75	60.28	118.68	27.75	77.60	46.80	5.68	40.40	27.85	24.75	44.43	6.78	31.53	18.33
Tulsa	5.10	57.25	59.98	118.65	27.00	79.68	47.78	5.18	39.13	28.55	25.48	43.20	5.45	29.28	17.85
018	6.10	59.50	60.73	108.98	27.00	70.58	44.63	5.25	38.13	26.70	23.83	42.80	6.25	29.10	16.83
LSD (.05)	0.25	2.47	1.15	4.51	1.77	3.91	2.13	0.78	3.57	1.44	1.16	2.42	0.92	3.55	1.06
CV	3.90	3.74	1.65	3.25	5.47	4.33	3.90	12.72	7.51	4.34	3.86	4.67	12.97	9.61	4.99

^a Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

■ Measurements taken in Albany, Oregon

4 reps; 20 plants/rep = 80 data points

Table 2A
2002 Laboratory Morphological Data

Cultivar	Lemna Length (mm)	Lemna Width (mm)	Lemna Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Length of Panicle from Lower Most Whorl to Tip (cm)	Spikelets per Panicle	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm) (BT: 8/17/02)	Number of Spikelets on the Longest Whorl
'Titanium'													
SBM	6.83	1.55	1.08	6.41	1.17	5.08	19.60	80.00	7.20	13.07	86.10	47.60	14.50
SBL	6.85	1.46	1.06	6.45	1.15	5.36	20.53	80.00	7.10	13.00	89.57	51.30	14.83
RB3	6.80	1.55	0.91	6.32	1.19	5.15	18.47	76.67	7.53	13.17	76.40	46.43	13.50
RB2	6.46	1.56	0.86	6.08	1.22	5.12	17.87	76.67	7.17	12.47	76.33	45.23	12.83
ATF799	6.55	1.47	0.84	6.19	1.15	5.00	17.23	72.33	7.50	12.87	74.47	42.80	13.80
ATF800	7.17	1.46	0.94	6.65	1.13	4.98	18.77	70.00	7.33	13.20	80.07	46.87	11.73
ATF802	7.00	1.55	0.83	6.34	1.21	5.31	20.60	82.67	8.20	13.50	92.07	52.87	15.27
ATF704S1	7.14	1.46	0.94	6.61	1.14	5.57	19.07	73.67	7.47	13.13	79.70	47.17	12.10
ATF803	6.77	1.49	0.82	6.28	1.10	5.31	21.73	85.33	7.67	13.07	101.13	54.20	13.80
ATF805	6.73	1.51	0.88	6.37	1.11	5.29	16.93	80.67	8.10	13.50	71.93	41.53	13.97
KY-31	7.74	1.62	0.98	7.25	1.26	5.77	29.33	116.33	8.07	15.13	111.17	67.90	16.33
Rebel II	6.77	1.45	1.07	6.35	1.09	5.35	21.67	98.00	6.90	12.53	91.77	53.83	14.57
Plantation	6.72	1.45	0.80	6.33	1.14	4.83	20.43	97.33	7.17	12.63	87.10	48.40	15.50
Tulsa	6.72	1.48	0.78	6.25	1.14	4.87	21.60	93.67	7.27	12.50	89.80	50.77	13.87
018	7.11	1.49	0.92	6.45	1.12	5.00	20.43	85.00	7.63	13.53	86.83	48.17	16.30
LSD (.05)	0.31	0.08	0.17	0.23	0.08	0.34	2.31	11.18	0.85	0.91	13.15	5.49	2.95
CV	3.25	3.94	12.97	2.64	5.23	4.83	8.32	9.84	8.43	5.08	11.21	8.11	15.44

■ Cultivar under evaluation

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Measurements taken in Albany, Oregon

3 reps; 20 plants/rep = 60 data points

Table 2B 2003 Laboratory Morphological Data

Cultivar	Lemma Length (mm)	Lemma Width (mm)	Lemma Awn Length (mm)	Palea Length (mm)	Palea Width (mm)	Glume Length (mm)	Length of Panicle from Lower Most Whorl to Tip (cm)	Spikelets per Panicle	Florets per Spikelet	Spikelet Length (mm)	Length of Longest Whorl (mm)	Distance Between Lower Most Whorls (mm) (8/17/03)	Number of Spikelets on the Longest Whorl
<i>Tritanum'</i>													
SBM	7.15	1.48	1.51	6.53	1.18	4.98	25.67	89.67	5.57	11.47	108.50	63.93	17.07
SBL	7.06	1.49	1.47	6.39	1.20	5.17	26.13	92.00	5.63	11.43	101.40	67.87	16.83
RB3	7.16	1.45	1.48	6.50	1.22	5.07	26.23	92.67	5.27	11.27	100.10	66.67	17.93
RB2	6.88	1.43	1.21	6.22	1.19	4.95	25.87	99.33	5.13	10.73	104.77	63.30	19.57
ATF799	6.52	1.46	1.15	6.10	1.17	4.72	22.50	85.33	5.23	10.50	89.47	55.83	15.93
ATF800	6.30	1.42	1.15	6.16	1.18	4.44	23.10	77.67	4.87	10.43	81.70	57.10	11.37
ATF802	6.47	1.37	1.37	6.07	1.17	4.80	27.43	92.33	5.60	10.53	111.00	68.57	18.27
ATF704S1	6.92	1.57	1.55	6.59	1.29	5.17	26.37	82.67	5.60	11.40	104.23	68.03	15.40
ATF803	6.20	1.60	1.35	6.18	1.20	4.98	28.83	97.67	4.97	10.47	126.50	69.93	17.30
ATF805	6.06	1.42	1.55	6.08	1.09	4.79	24.57	103.00	5.53	10.50	85.17	58.53	16.57
KY-31	7.28	1.55	1.59	7.13	1.32	5.41	34.67	122.67	6.23	13.23	123.40	80.83	17.93
Rebel II	6.75	1.47	1.80	6.21	1.18	5.00	29.47	108.00	4.53	10.63	117.07	71.40	18.47
Plantation	6.41	1.45	1.31	6.14	1.19	4.40	27.30	105.33	4.80	10.13	106.87	65.43	17.37
Tulsa	6.33	1.42	1.39	5.97	1.24	4.51	27.67	100.67	4.77	9.87	101.97	68.40	16.97
018	6.45	1.41	1.52	6.08	1.15	4.51	25.93	92.33	5.37	10.60	96.53	63.23	16.90
LSD (.05)	0.70	0.10	0.27	0.31	0.10	0.37	1.81	8.48	0.47	0.79	11.74	5.46	2.80
CV	7.74	4.86	13.52	3.64	6.31	5.60	4.93	6.51	6.53	5.28	8.27	6.05	12.18

Cultivar under evaluation

Significant difference over two years one location.

Significant difference over one year one location.

Measurements taken in Albany, Oregon

3 reps; 20 plants/rep = 60 data points

Table 3A 2002 Additional Morphological Measurements of the Panicle

Cultivar	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Horizontal	Growth Habit at Anthesis % Semi-Erect	Growth Habit at Anthesis % Erect	Anther Color % Purple	Panicle Color % Purple	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Oblong	Panicle Type % Open	Panicle Branch Lower Whorl =1	Panicle Branch Lower Whorl =2	Panicle Branch Lower Whorl >3	Panicle Branch Pubescence % Present
<i>Tripsacum</i>															
SBM	0	2	56	42	5	27	100	3	2	65	65	20	75	5	8
SBL	0	20	45	35	5	20	100	2	3	60	60	30	65	5	3
RB3	0	28	42	30	2	18	100	0	0	72	72	30	67	3	7
RB2	0	12	55	33	10	20	100	2	0	67	67	20	75	5	2
ATF799	0	17	58	25	10	43	100	0	0	38	38	40	55	5	12
ATF800	0	32	53	15	3	45	100	5	0	43	43	18	78	2	0
ATF802	3	25	58	14	7	50	100	3	0	53	53	23	75	2	2
ATF704S1	0	22	71	7	3	20	100	3	0	47	47	23	75	2	5
ATF803	2	50	45	3	0	32	100	2	5	30	30	8	83	9	3
ATF805	0	20	62	18	3	23	100	2	0	27	27	15	82	3	3
KY-31	10	62	28	0	3	7	100	0	15	23	23	8	87	5	18
Rebel II	3	17	48	32	3	40	100	0	0	48	48	9	80	11	3
Plantation	0	8	64	28	5	35	100	0	0	50	50	13	85	2	12
Tulsa	2	34	57	7	3	32	100	3	3	45	45	10	88	2	2
018	0	5	57	38	5	25	100	0	0	45	45	40	60	0	7

Cultivar under evaluation

Measurements taken in Albany, Oregon

3 reps; 20 plants/rep = 60 data points

Table 3B 2003 Additional Morphological Measurements of the Panicle

Cultivar	Growth Habit at Anthesis % Semi-Prostrate	Growth Habit at Anthesis % Horizontal	Growth Habit at Anthesis % Semi-Erect	Growth Habit at Anthesis % Erect	Anther Color % Purple	Panicle Color % Purple	Lemma Awn % Present	Glume Color % Purple	Panicle Orientation % Nodding	Panicle Shape % Oblong	Panicle Type % Open	Panicle Branch Lower Whorl =1	Panicle Branch Lower Whorl =2	Panicle Branch Lower Whorl >3	Panicle Branch Pubescence % Present
<i>Tripsacum</i>															
SBM	0	4	55	41	2	7	100	2	0	62	62	24	68	9	2
SBL	0	22	45	33	2	12	100	3	0	65	65	34	59	7	4
RB3	0	25	47	28	2	3	100	0	0	66	66	39	49	13	0
RB2	0	11	57	32	2	3	100	0	0	72	72	54	44	2	1
ATF799	0	33	54	13	3	12	100	3	0	66	66	36	54	10	1
ATF800	0	41	52	7	18	0	100	3	0	70	70	21	68	11	5
ATF802	5	36	53	6	2	17	100	8	0	77	77	38	60	3	1
ATF704S1	0	25	70	5	2	5	100	5	0	81	81	25	71	4	2
ATF803	6	49	43	2	2	12	100	5	0	70	70	24	71	6	1
ATF805	0	17	67	16	0	5	100	0	0	55	55	31	59	10	2
KY-31	12	55	33	0	0	0	100	7	0	100	100	15	75	10	5
Rebel II	3	20	42	35	3	8	100	0	0	80	80	19	64	18	0
Plantation	0	3	72	25	0	13	100	3	2	72	72	15	76	9	6
Tulsa	4	33	60	3	3	10	100	0	0	80	80	35	59	6	1
O18	0	2	75	23	0	3	100	0	0	69	69	33	59	9	0

Cultivar under evaluation

Measurements taken in Albany, Oregon
3 reps; 20 plants/rep = 60 data points

Panicle Type Inflorescence

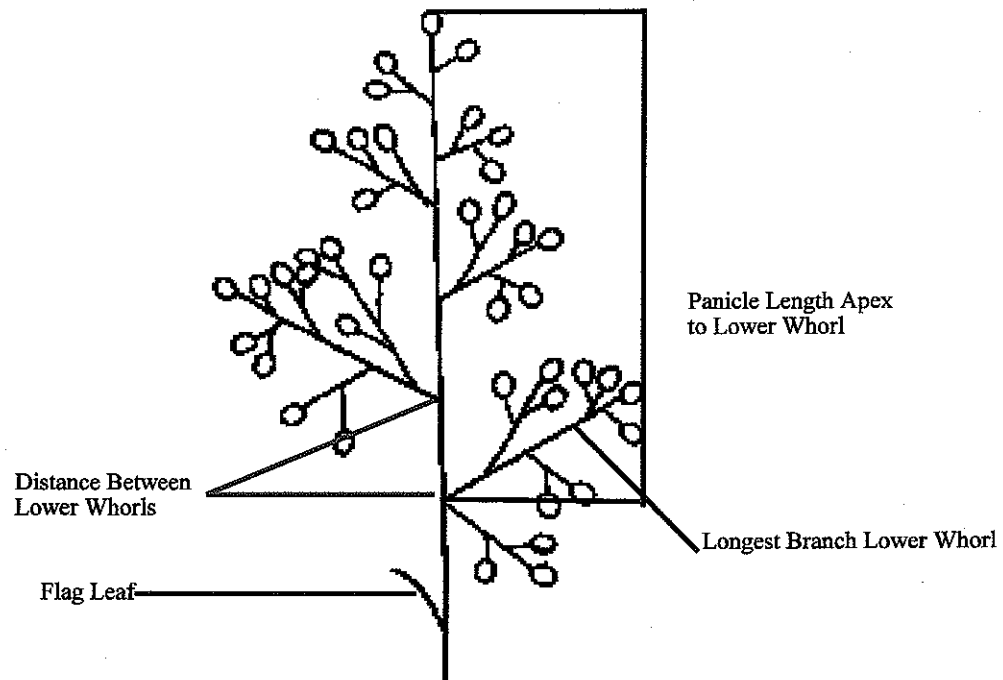


Illustration 1.

2002 Additional Morphological Measurements

Table 4A

Cultivar	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Blade Auricle Hairs % Present	Leaf Sheath Hairs % Present	Rhizomes % Present	Lemma Hairs % Present	Palea Hairs % Present	Node Color % Distinct	Seed Weight (mg/1,000 seeds)
SBM	0	35	23	42	98	98	98	0	95	100	2	3194
SBL	0	35	33	32	97	93	93	0	100	100	15	2578
RB3	0	18	35	47	100	97	97	0	98	100	5	3977
RB2	0	28	22	48	98	95	95	0	97	100	3	2103
ATF799	0	25	22	53	100	97	97	0	100	100	7	2350
ATF800	0	7	22	71	100	100	100	0	100	100	32	3080
ATF802	0	33	24	43	100	98	98	0	98	100	30	2638
ATF704S1	0	30	32	38	100	97	97	0	100	100	17	2562
ATF803	0	15	18	67	100	97	97	0	100	100	28	3195
ATF805	0	10	12	78	100	95	95	0	100	100	12	3006
KY-31	0	58	22	18	100	95	95	0	100	100	30	2924
Rebel II	0	12	15	73	100	98	98	0	100	100	10	2334
Plantation	0	15	25	60	100	100	100	0	100	100	3	2458
Tulsa	0	47	16	37	100	98	98	0	100	100	15	2347
O18	0	13	12	75	100	100	100	0	100	100	5	2338

Cultivar under evaluation

Measurements taken in Albany, Oregon
3 reps; 20 plants/rep = 60 data points

Table 4B 2003 Additional Morphological Measurements

Cultivar	Anthocyanin Present in the Leaf Blade % Purple	Leaf Blade Margin Roughness to the Touch % Smooth	Leaf Blade Margin Roughness to the Touch % Semi-Rough	Leaf Blade Margin Roughness to the Touch % Rough	Leaf Blade Margin Hairs % Present	Leaf Blade Auricle Hairs % Present	Rhizomes % Present	Lemna Hairs % Present	Palea Hairs % Present	Node Color % Distinct	Seed Weight (mg/1,000 seeds)
<i>Triticum</i> SBM	0	78	17	5	100	92	0	100	100	5	3190
SBL	0	85	15	0	99	90	0	100	100	10	2580
RB3	0	78	20	2	95	92	0	99	100	2	3973
RB2	0	88	12	0	96	97	0	100	100	3	2109
ATF799	0	72	18	10	92	91	0	100	100	5	2345
ATF800	0	55	43	2	92	90	0	100	100	5	3114
ATF802	0	83	17	0	99	90	0	100	100	18	2702
ATF704S1	0	77	18	5	95	92	0	99	100	20	2564
ATF803	0	70	23	7	99	95	0	100	100	10	3139
ATF805	0	82	15	3	96	90	0	99	100	0	3070
KY-31	0	55	37	8	96	94	0	100	100	32	2937
Rebel II	0	85	12	3	97	91	0	99	100	5	2310
Plantation	0	72	20	8	97	92	0	100	100	2	2463
Tulsa	0	90	7	3	97	96	0	100	100	8	2352
018	0	77	22	2	96	91	0	99	100	2	2345

Cultivar under evaluation

Measurements taken in Albany, Oregon
3 reps; 20 plants/rep = 60 data points

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) <i>Rutgers, The State University of New Jersey</i> Dr. William Meyer (BT-3/17/99) Rutgers University	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER SBM	3. VARIETY NAME Titanium
4. ADDRESS (Street and No., or R.F.D. No., City, State, and Zip, and Country) Foran Hall Plant Biology & Pathology Dept. 59 Dudley Road New Brunswick, NJ 08901	5. TELEPHONE (Include area code) 732 - 932 - 9711 ext. 160	6. FAX (Include area code) 732 - 932 - 9441
7. PVPO NUMBER <i>200400113</i> <i>200400113</i>		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES☐ NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒ YES☐ NO

10. Is the applicant the original owner?

If no, please answer one of the following:☒ YES☐ NO

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☒ YES☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☒ YES☐ NO

If no, give name of country

11. Additional explanation on ownership (If needed, use the reverse for extra space):

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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